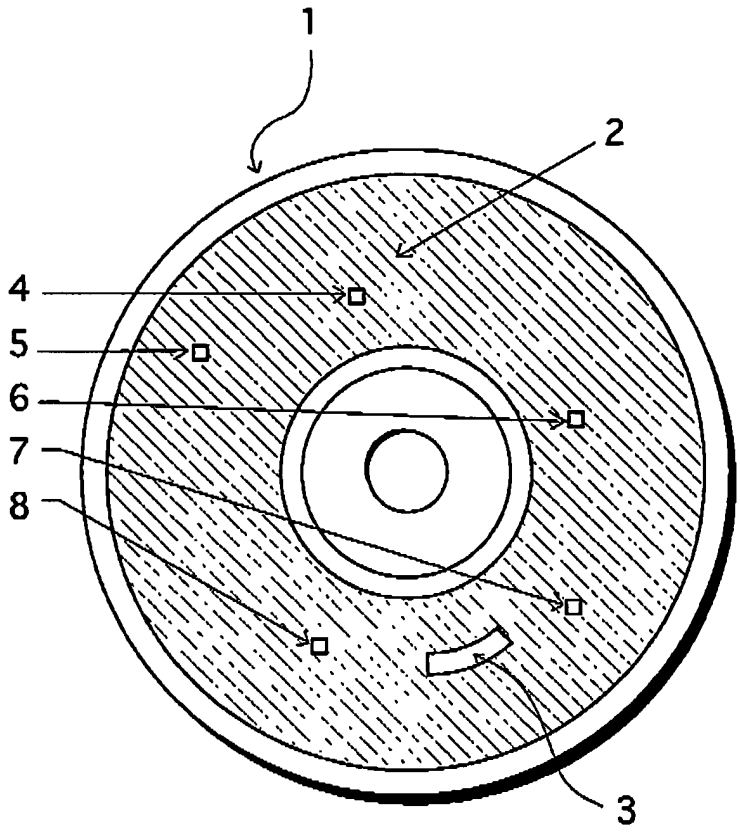
FIG. 1



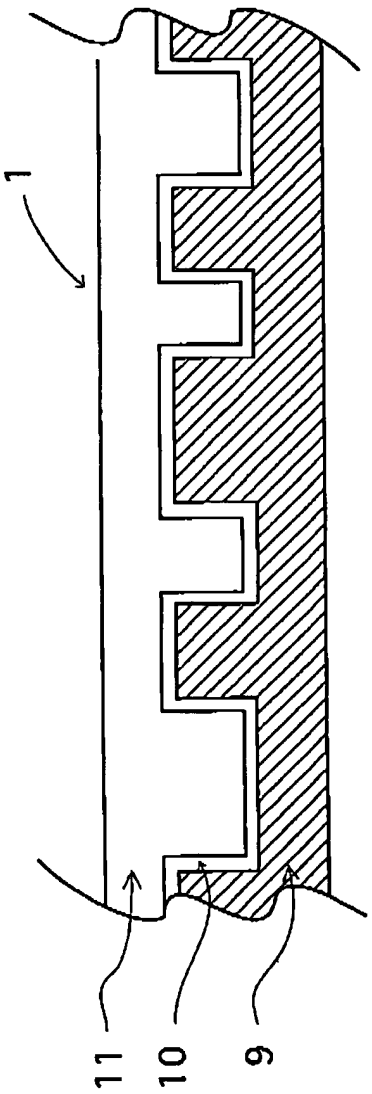

1
11
10
9

FIG.2A

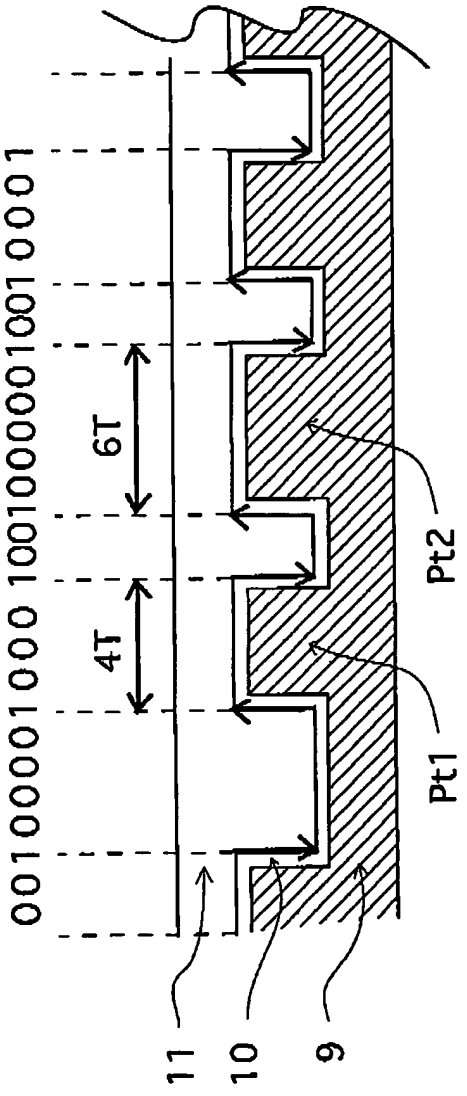

0010000010000 1001000001001 0001
6T
4T
Pt2
Pt1
11
10
9

FIG.2B

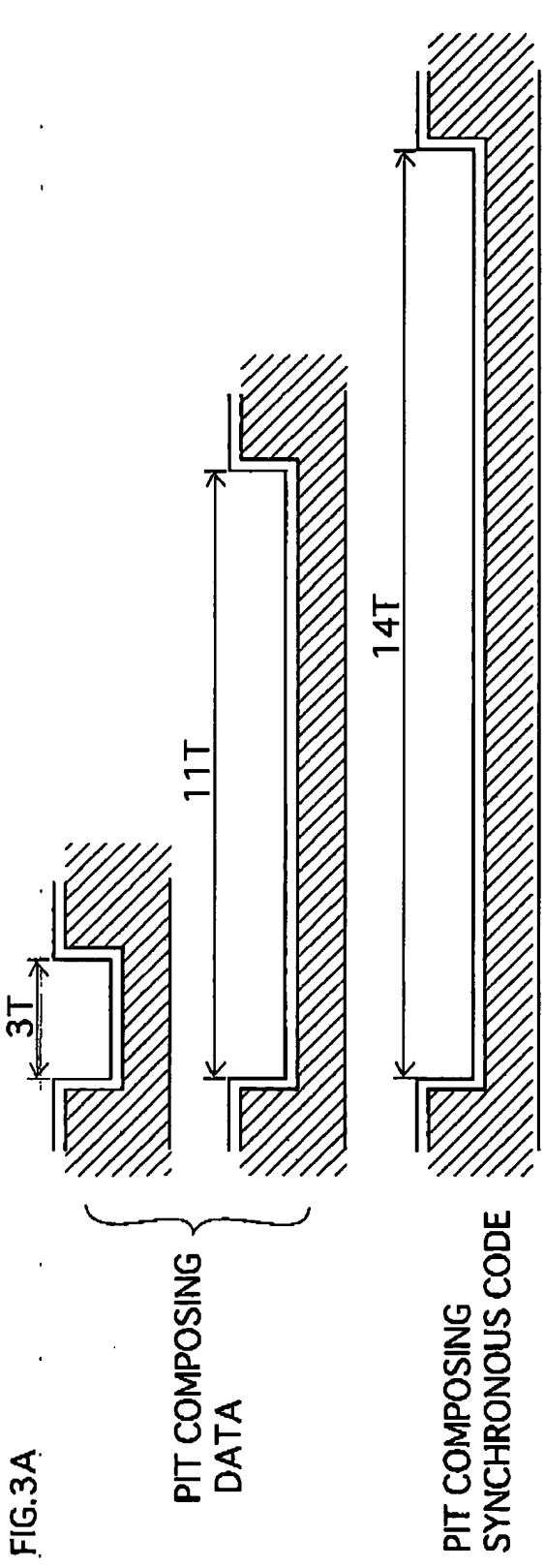

3T
11T
14T
PIT COMPOSING DATA
PIT COMPOSING SYNCHRONOUS CODE

FIG.3A

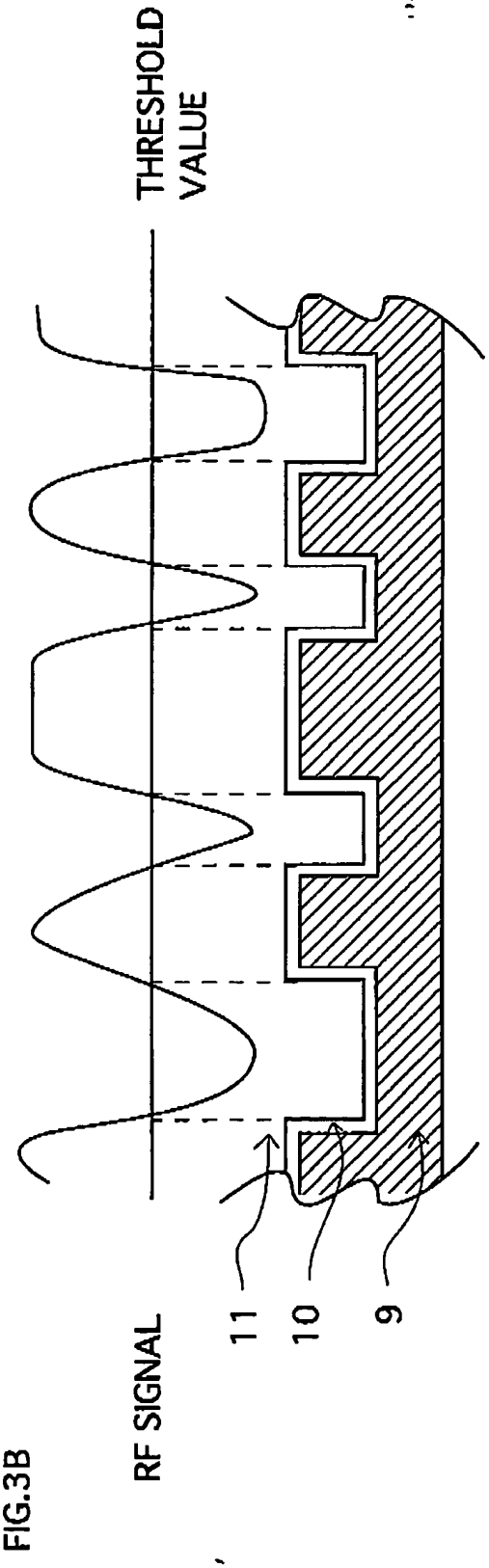
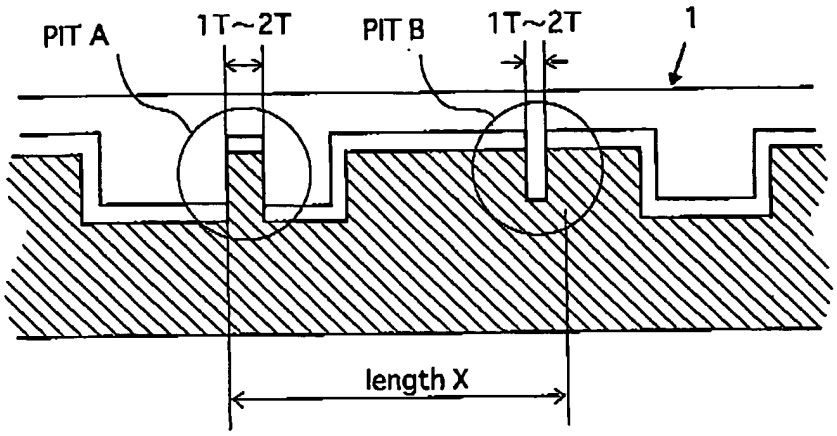

THRESHOLD VALUE
RF SIGNAL
11
10
9

FIG.3B

FIG.4



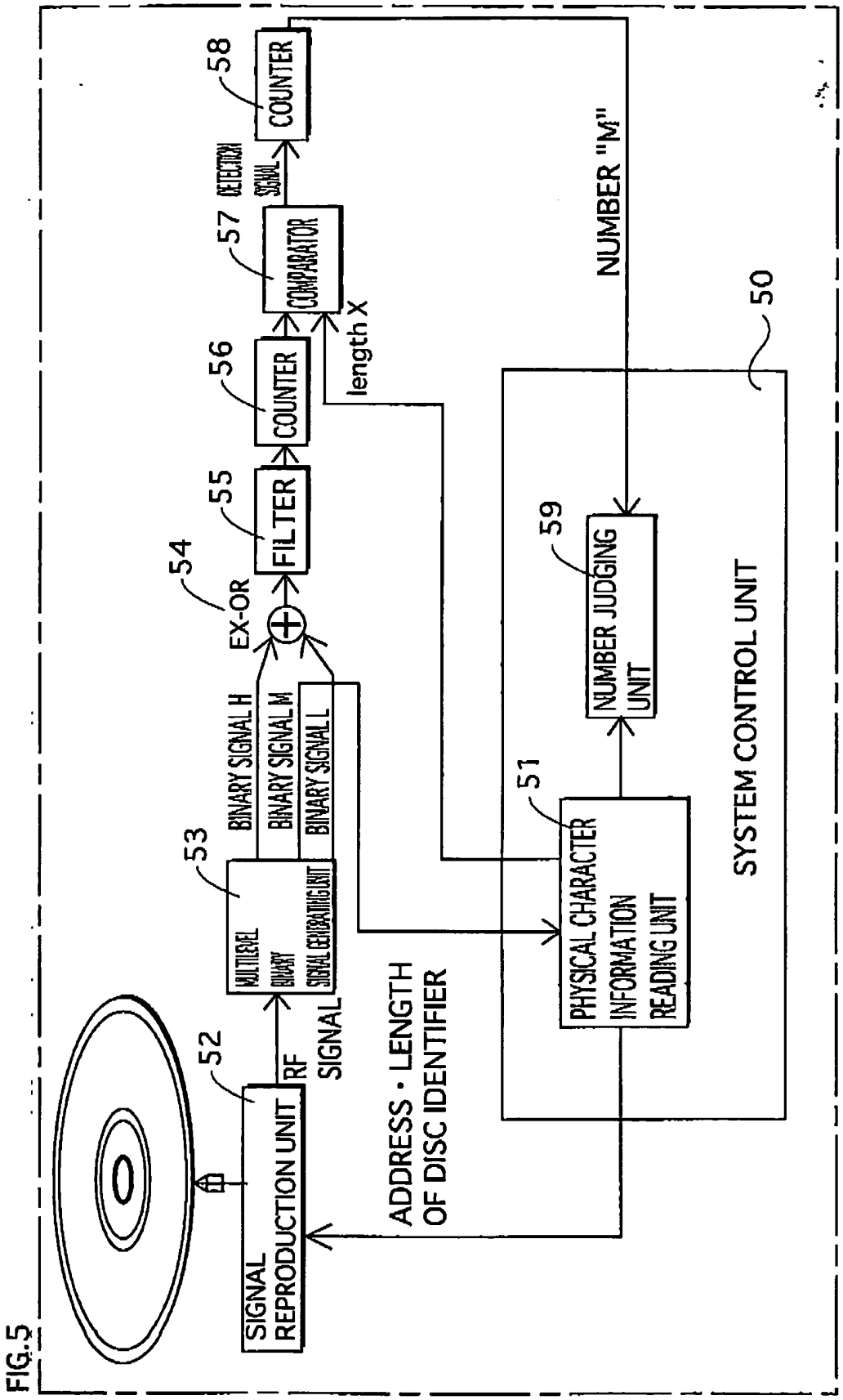

SYSTEM CONTROL UNIT
50
NUMBER "M"
SIGNAL REPRODUCTION UNIT
52
RF SIGNAL
MULTILEVEL BINARY SIGNAL GENERATING UNIT
53
BINARY SIGNAL H
BINARY SIGNAL M
BINARY SIGNAL L
EX-OR
54
FILTER
55
COUNTER
56
length X
COMPARATOR
57
DETECTION SIGNAL
COUNTER
58
NUMBER JUDGING UNIT
59
PHYSICAL CHARACTER INFORMATION READING UNIT
51
ADDRESS · LENGTH OF DISC IDENTIFIER

FIG.5

FIG.6

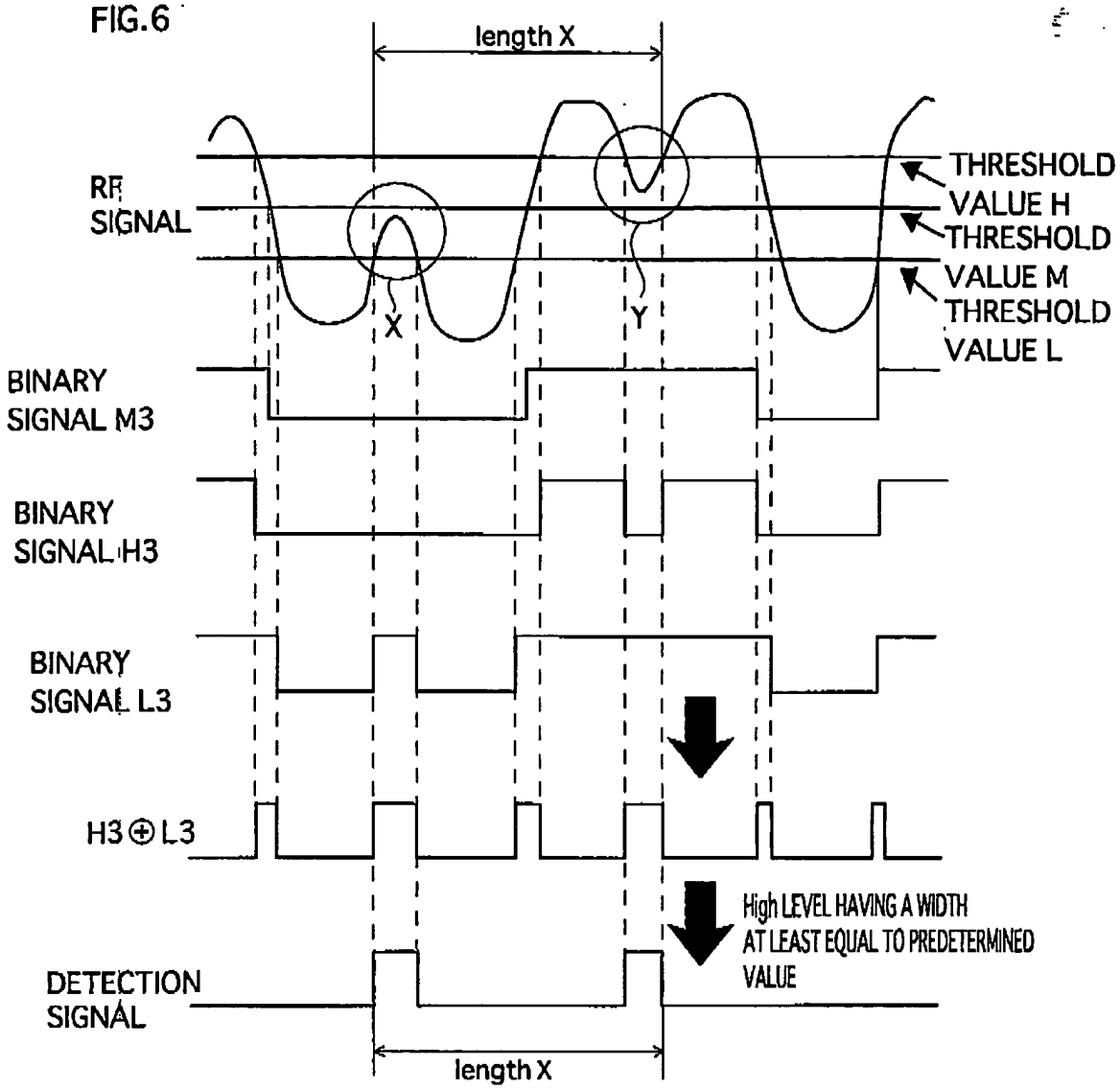

length X
RF SIGNAL
THRESHOLD VALUE H
THRESHOLD VALUE M
THRESHOLD VALUE L
X
Y
BINARY SIGNAL M3
BINARY SIGNAL H3
BINARY SIGNAL L3
H3 ⊕ L3
High LEVEL HAVING A WIDTH AT LEAST EQUAL TO PREDETERMINED VALUE
DETECTION SIGNAL
length X

FIG.7

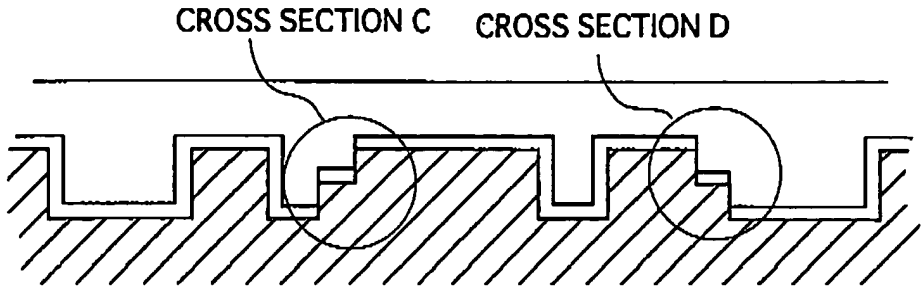

CROSS SECTION C
CROSS SECTION D

FIG.8

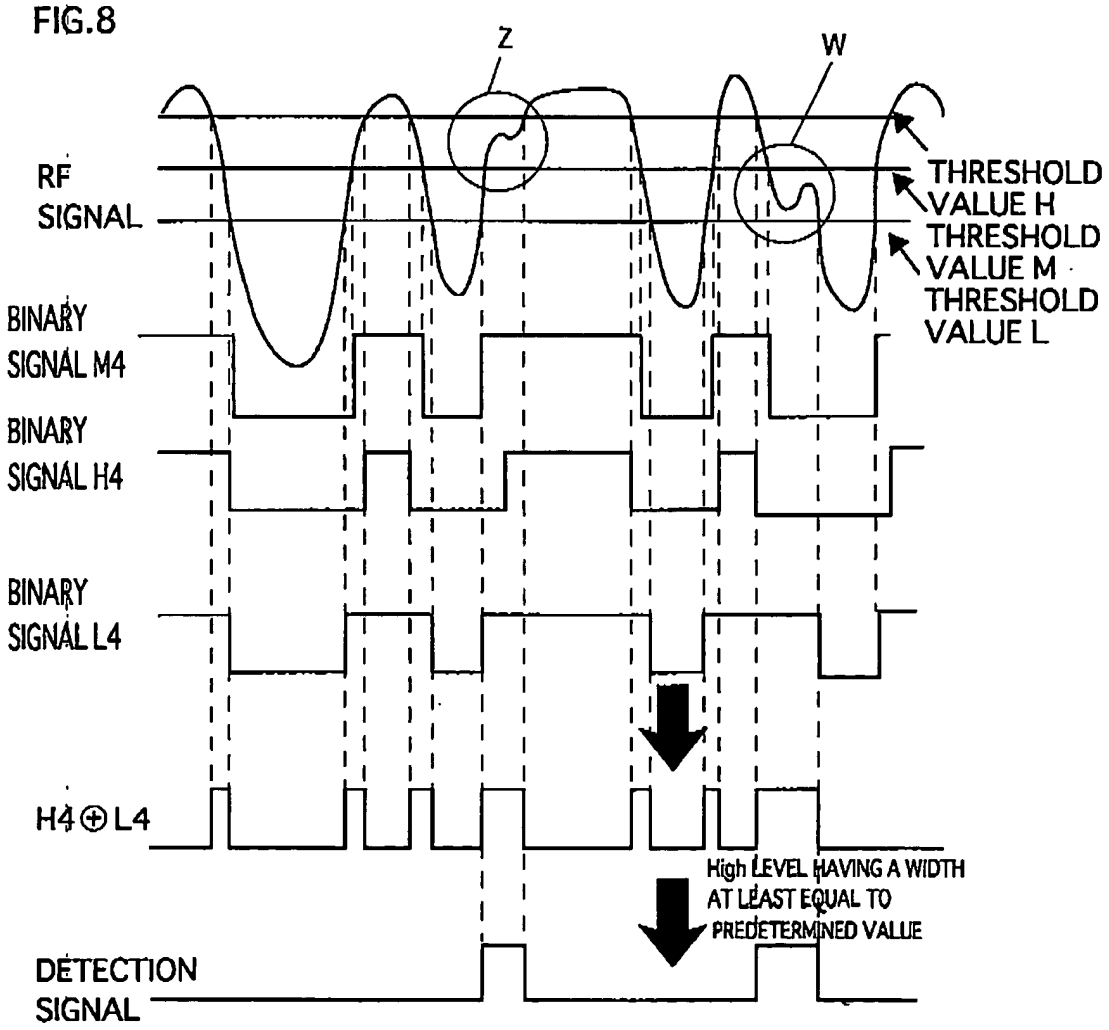
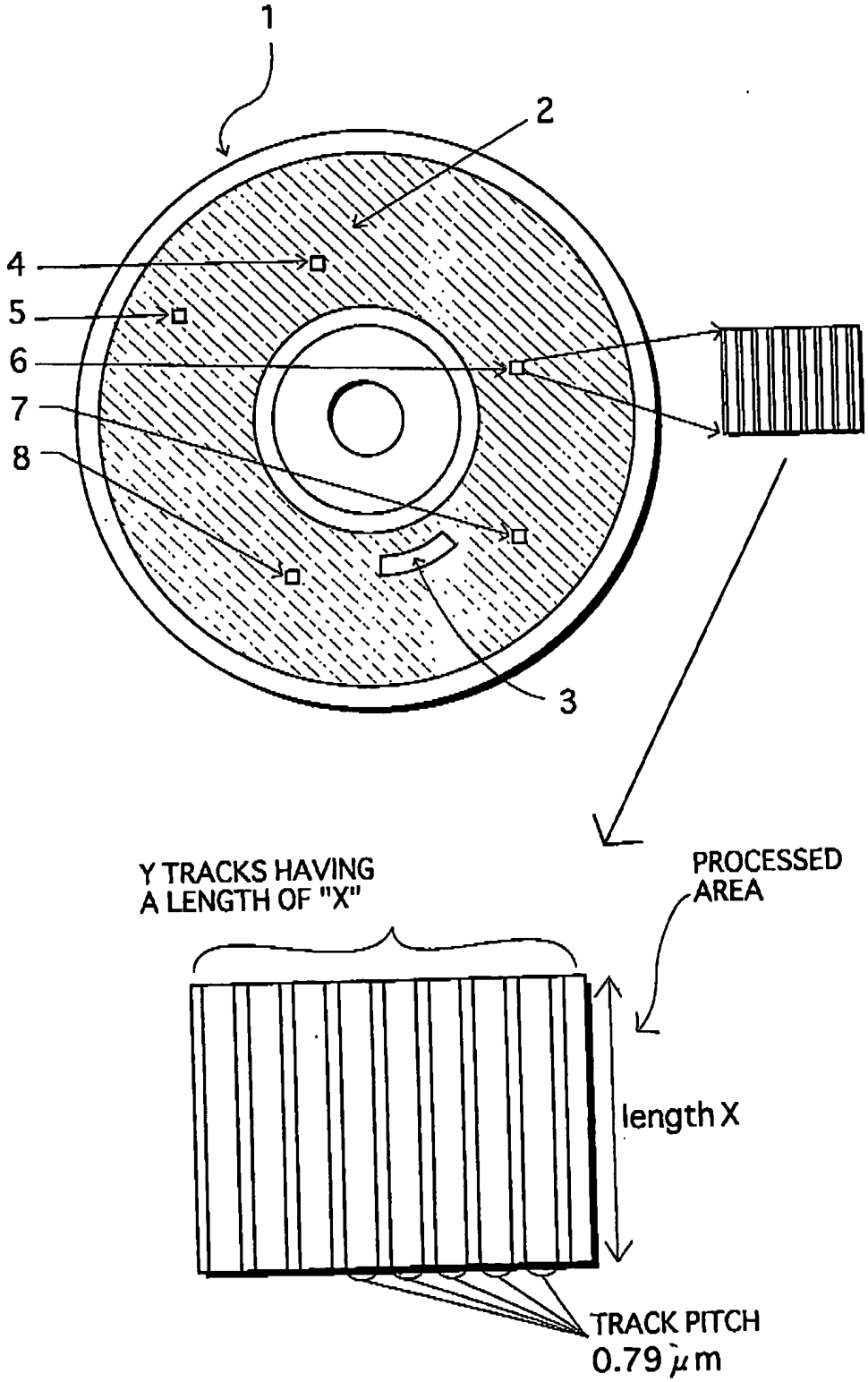

Z
W
RF SIGNAL
THRESHOLD VALUE H
THRESHOLD VALUE M
THRESHOLD VALUE L
BINARY SIGNAL M4
BINARY SIGNAL H4
BINARY SIGNAL L4
H4 ⊕ L4
High LEVEL HAVING A WIDTH AT LEAST EQUAL TO PREDETERMINED VALUE
DETECTION SIGNAL

FIG.9


1
2
4
5
6
7
8
3
Y TRACKS HAVING
A LENGTH OF "X"
PROCESSED
AREA
length X
TRACK PITCH
0.79 μm

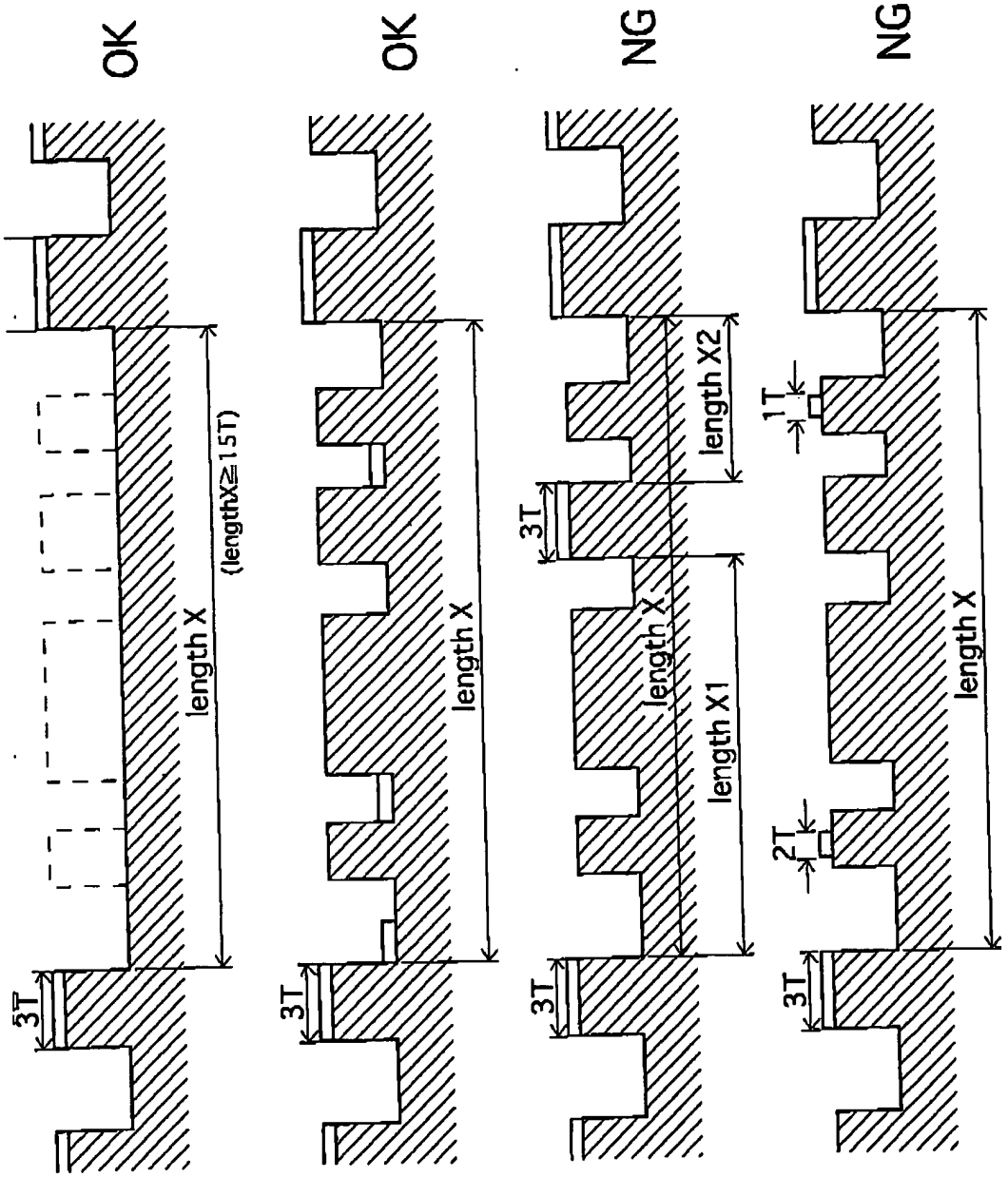


FIG.10A

FIG.10B

FIG.10C

FIG.10D

FIG.11A

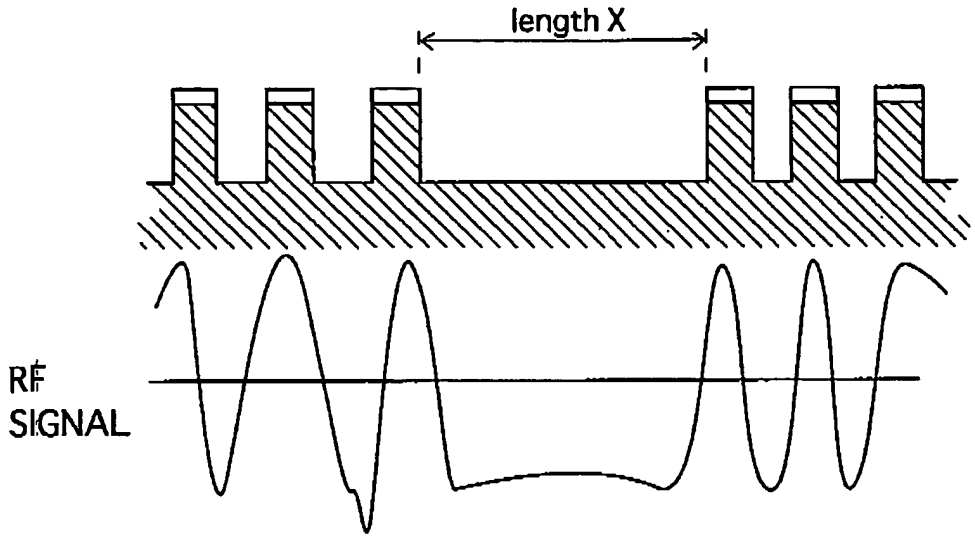


FIG.11B

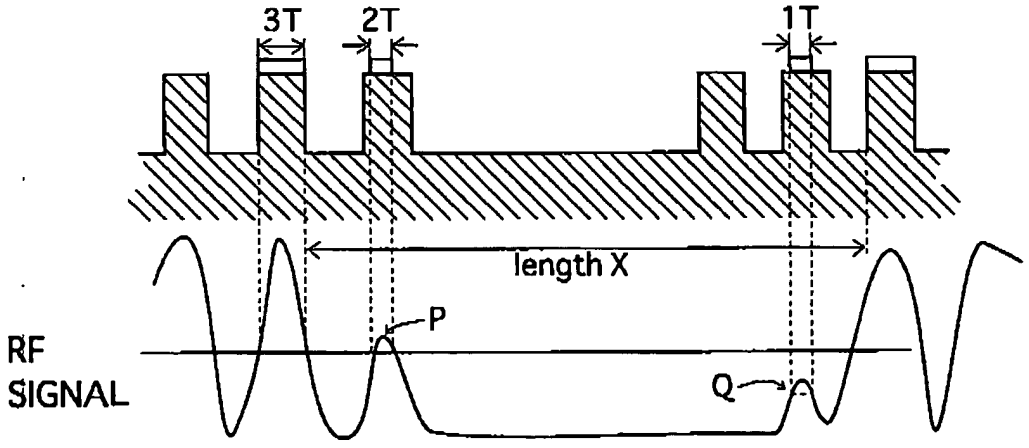


FIG. 12A

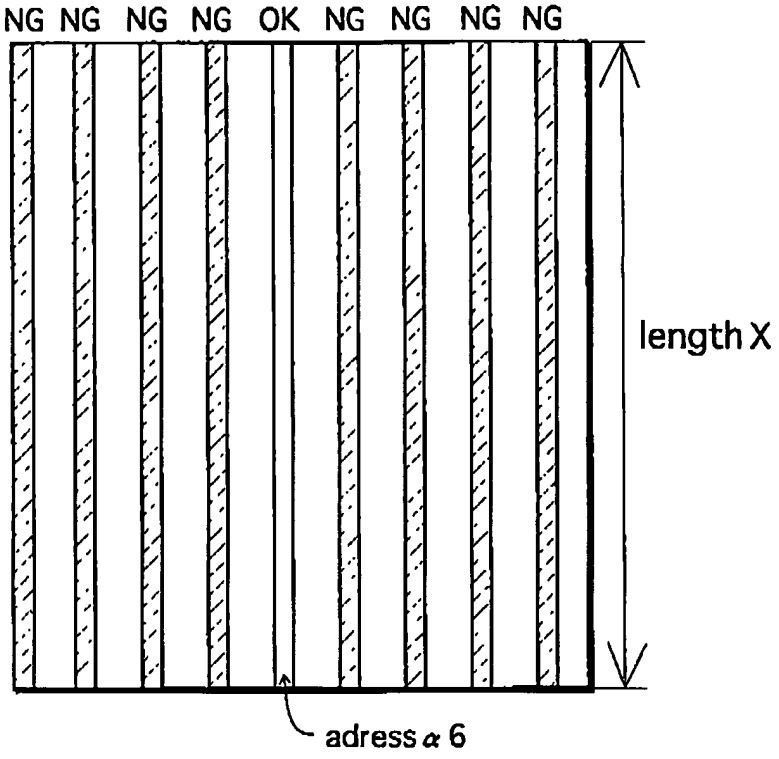


FIG. 12B

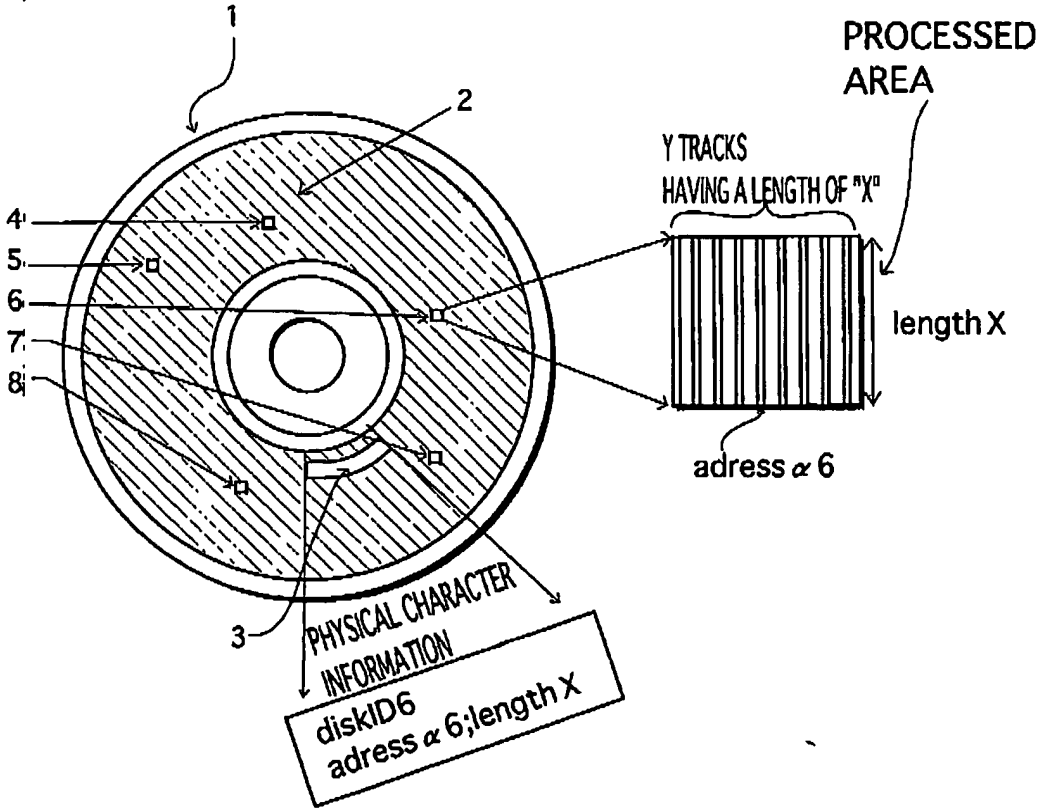
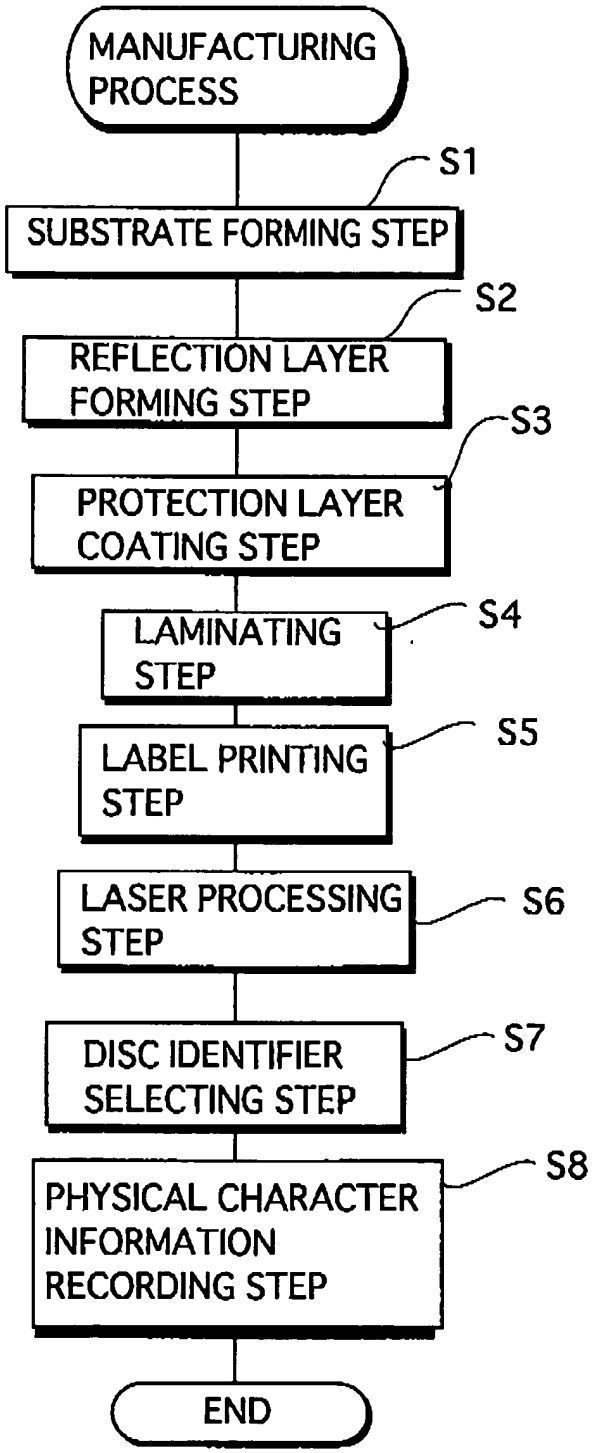


FIG.13


MANUFACTURING PROCESS
S1
SUBSTRATE FORMING STEP
S2
REFLECTION LAYER FORMING STEP
S3
PROTECTION LAYER COATING STEP
S4
LAMINATING STEP
S5
LABEL PRINTING STEP
S6
LASER PROCESSING STEP
S7
DISC IDENTIFIER SELECTING STEP
S8
PHYSICAL CHARACTER INFORMATION RECORDING STEP
END

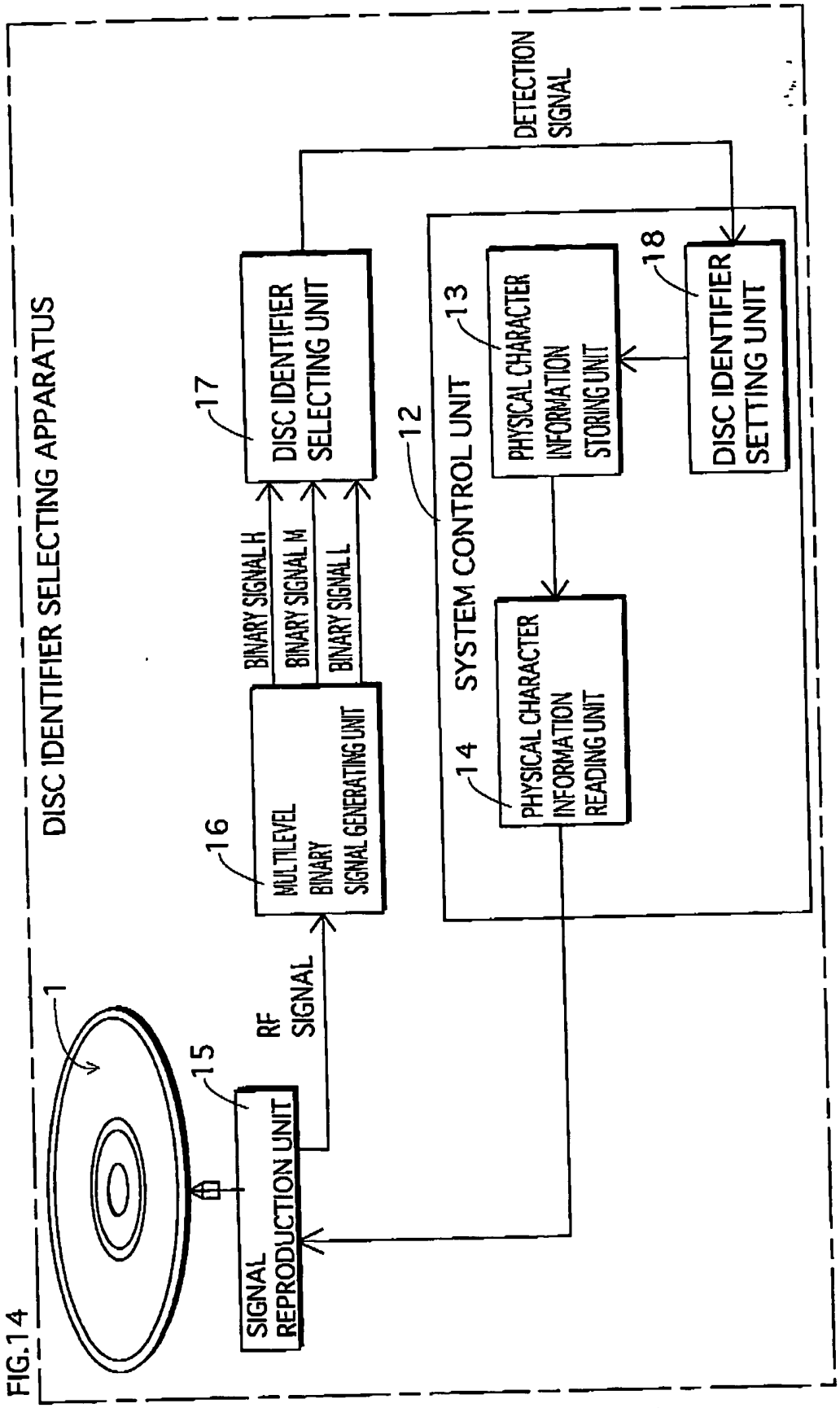

DISC IDENTIFIER SELECTING APPARATUS
1
15
SIGNAL REPRODUCTION UNIT
RF SIGNAL
16
MULTILEVEL BINARY SIGNAL GENERATING UNIT
BINARY SIGNAL H
BINARY SIGNAL M
BINARY SIGNAL L
17
DISC IDENTIFIER SELECTING UNIT
DETECTION SIGNAL
12
SYSTEM CONTROL UNIT
14
PHYSICAL CHARACTER INFORMATION READING UNIT
13
PHYSICAL CHARACTER INFORMATION STORING UNIT
18
DISC IDENTIFIER SETTING UNIT

FIG.14

FIG.15A

PHYSICAL CHARACTER INFORMATION TABLE

	PHYSICAL CHARACTER INFORMATION COLUMN	OK/NG COLUMN
PROCESSED AREA 1	PHYSICAL CHARACTER INFORMATION1 PHYSICAL CHARACTER INFORMATION2 PHYSICAL CHARACTER INFORMATION3 ⋮ PHYSICAL FEATURE INFORMATION Y	— — ⋮ —
PROCESSED AREA 2	PHYSICAL CHARACTER INFORMATION1 PHYSICAL CHARACTER INFORMATION2 PHYSICAL CHARACTER INFORMATION3 ⋮ PHYSICAL CHARACTER INFORMATION Y	— — — ⋮ —
⋮	⋮	⋮
PROCESSED AREA N	PHYSICAL CHARACTER INFORMATION1 PHYSICAL CHARACTER INFORMATION2 PHYSICAL CHARACTER INFORMATION3 ⋮ PHYSICAL CHARACTER INFORMATION Y	— — — ⋮ —

FIG.15B

PHYSICAL CHARACTER INFORMATION TABLE

	PHYSICAL CHARACTER INFORMATION COLUMN	OK/NG COLUMN
PROCESSED AREA 1	PHYSICAL CHARACTER INFORMATION1 PHYSICAL CHARACTER INFORMATION2 PHYSICAL CHARACTER INFORMATION3 ⋮ PHYSICAL CHARACTER INFORMATION Y	NG NG NG ⋮ NG
PROCESSED AREA 2	PHYSICAL CHARACTER INFORMATION1 PHYSICAL CHARACTER INFORMATION2 PHYSICAL CHARACTER INFORMATION3 ⋮ PHYSICAL CHARACTER INFORMATION Y	NG NG NG ⋮ NG
⋮	⋮	⋮
PROCESSED AREA 6	PHYSICAL CHARACTER INFORMATION1 PHYSICAL CHARACTER INFORMATION2 ⋮ PHYSICAL CHARACTER INFORMATION5 ⋮ PHYSICAL CHARACTER INFORMATION Y	NG NG ⋮ OK ⋮ NG

FIG.16A

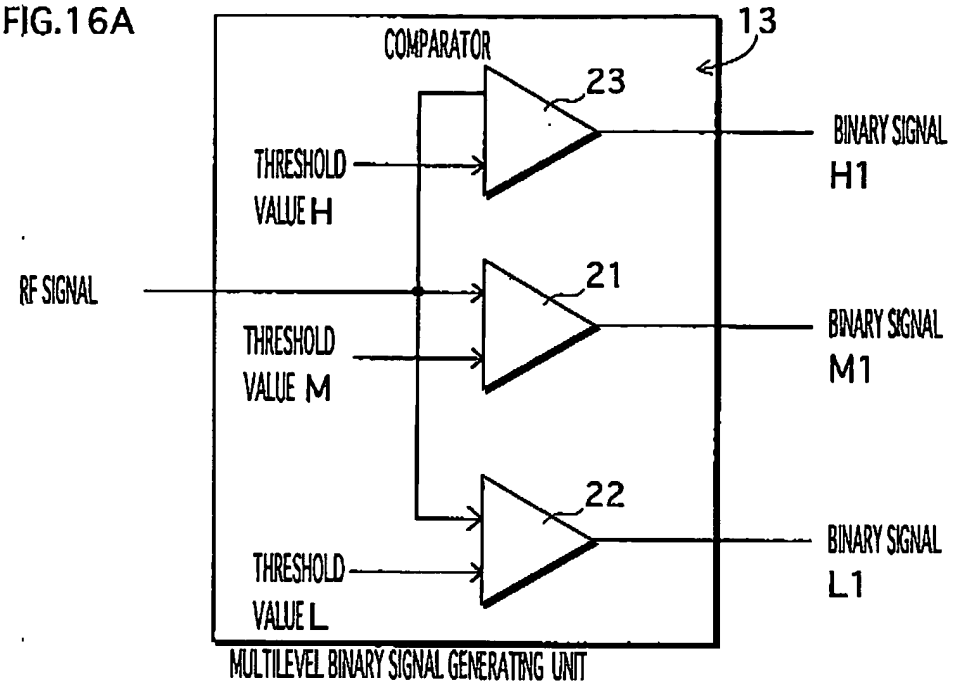


FIG.16B

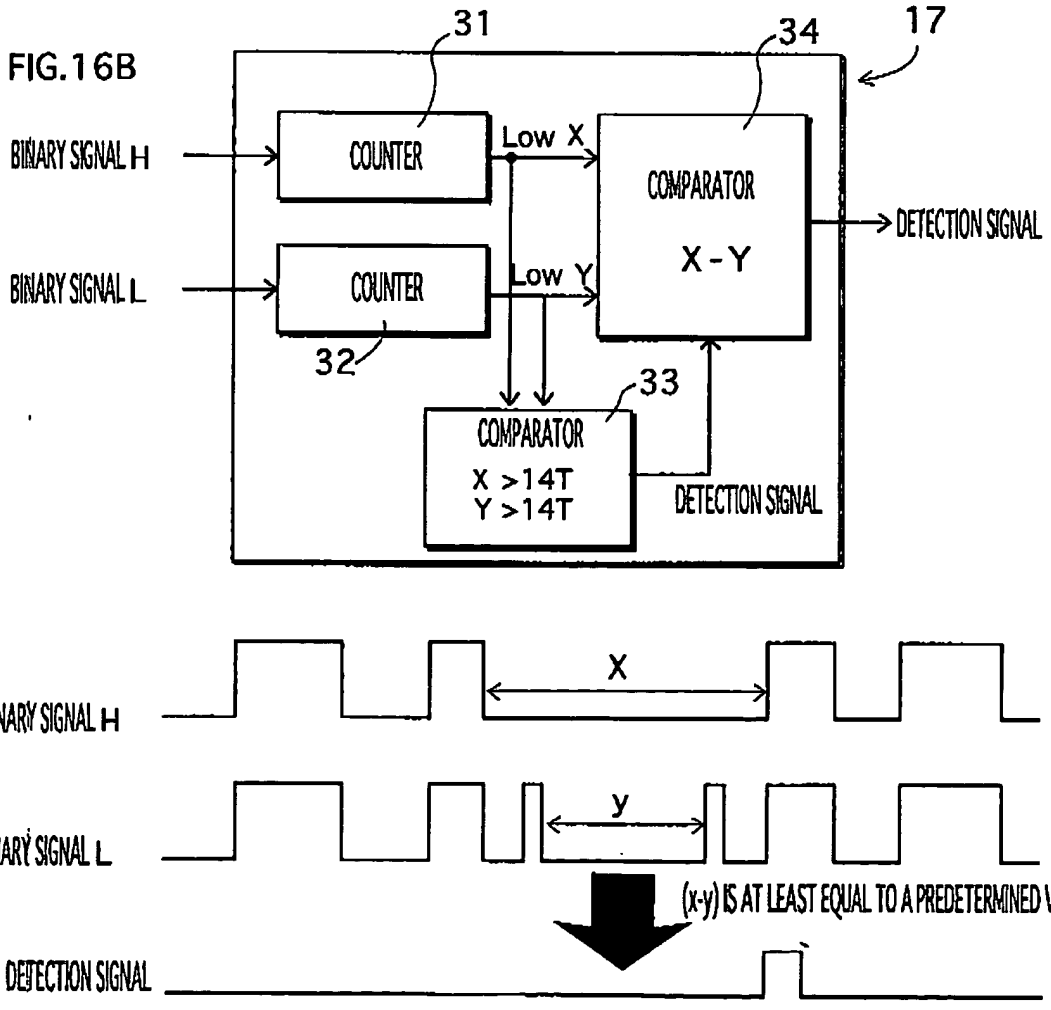


FIG.17A

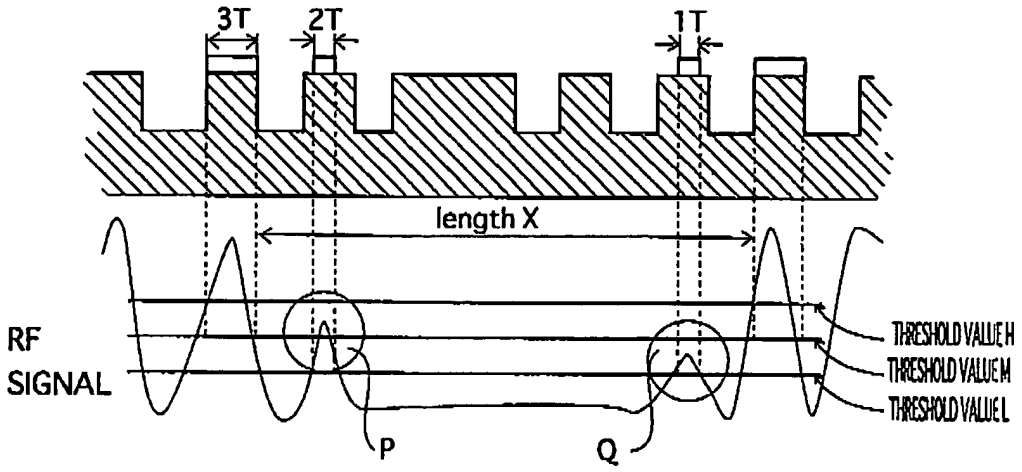


FIG.17B

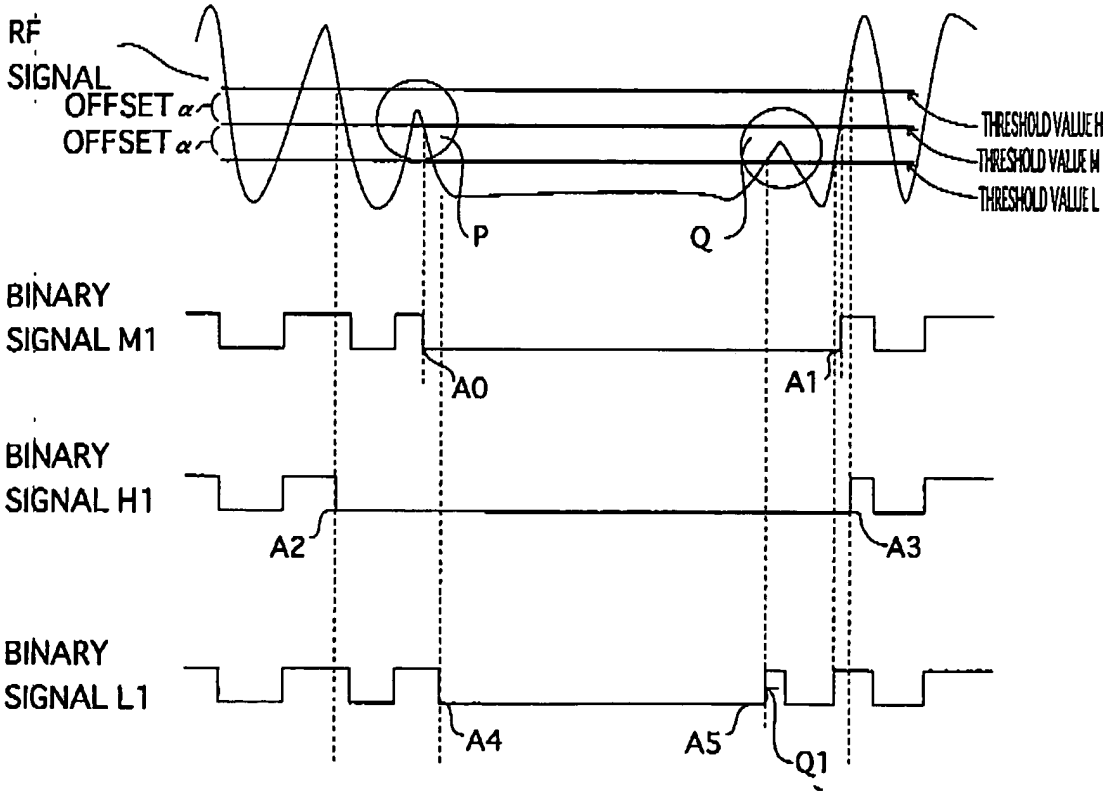


FIG.18

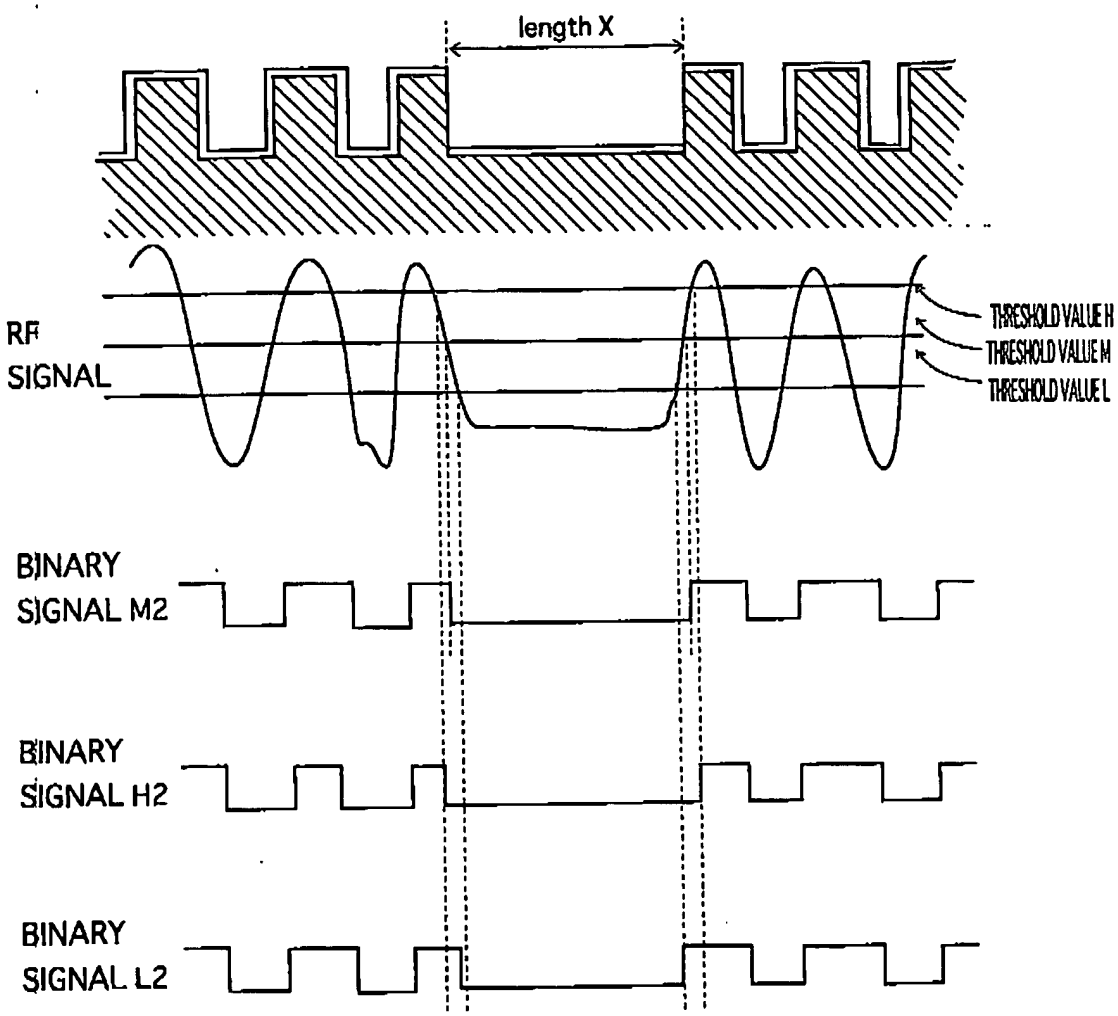

length X
RF
SIGNAL
THRESHOLD VALUE H
THRESHOLD VALUE M
THRESHOLD VALUE L
BINARY
SIGNAL M2
BINARY
SIGNAL H2
BINARY
SIGNAL L2

FIG.19A

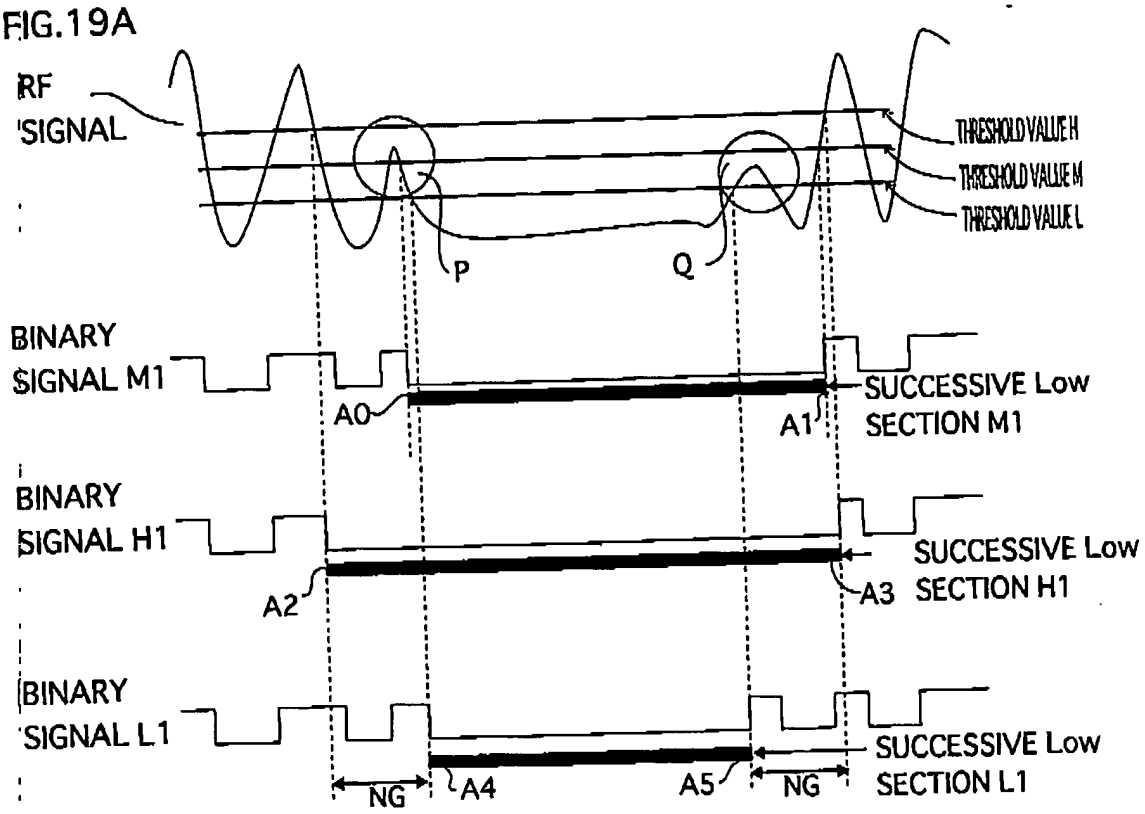
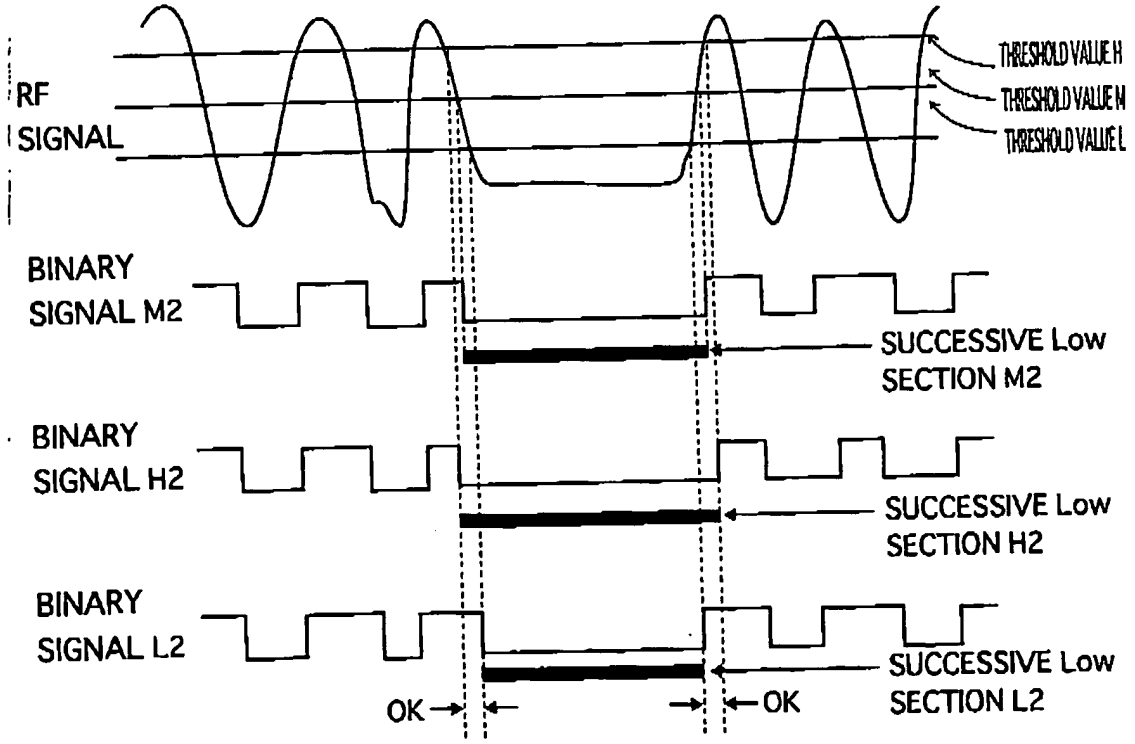


FIG.19B



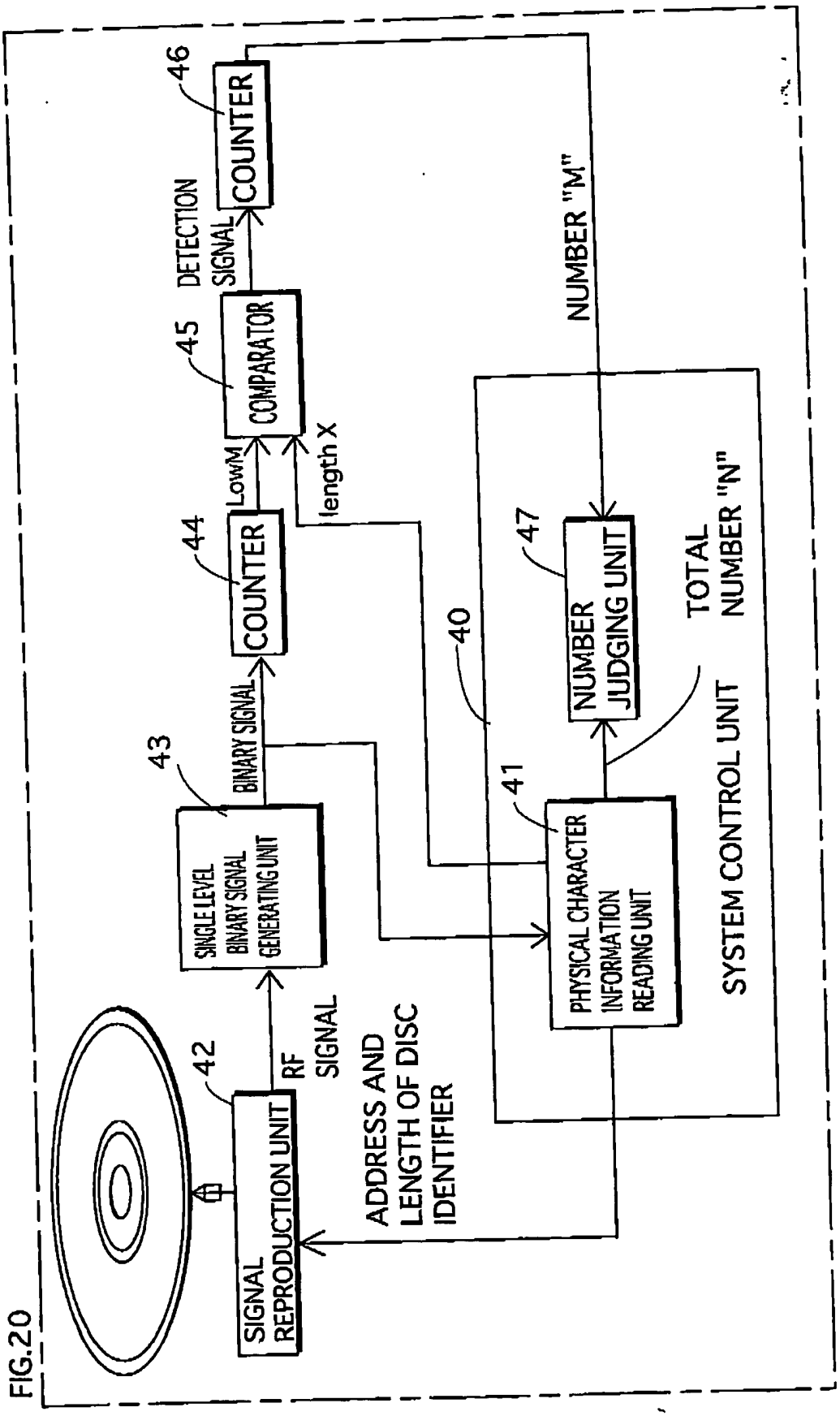

SYSTEM CONTROL UNIT
SIGNAL REPRODUCTION UNIT
42
RF SIGNAL
ADDRESS AND LENGTH OF DISC IDENTIFIER
SINGLE LEVEL BINARY SIGNAL GENERATING UNIT
43
BINARY SIGNAL
PHYSICAL CHARACTER INFORMATION READING UNIT
41
40
NUMBER JUDGING UNIT
47
TOTAL NUMBER "N"
NUMBER "M"
COUNTER
44
LowM
length X
COMPARATOR
45
DETECTION SIGNAL
COUNTER
46

FIG.20

FIG.21

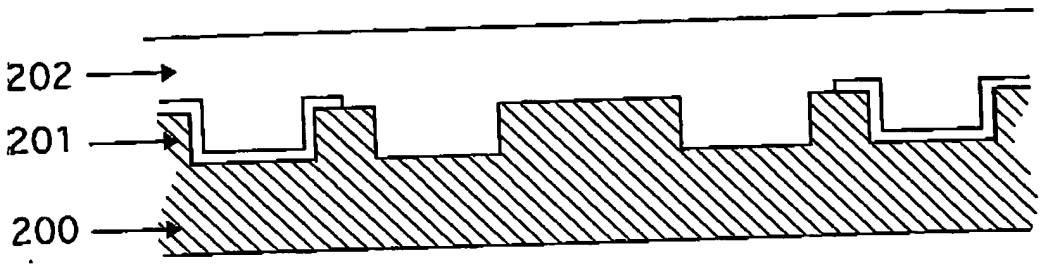


FIG.22A

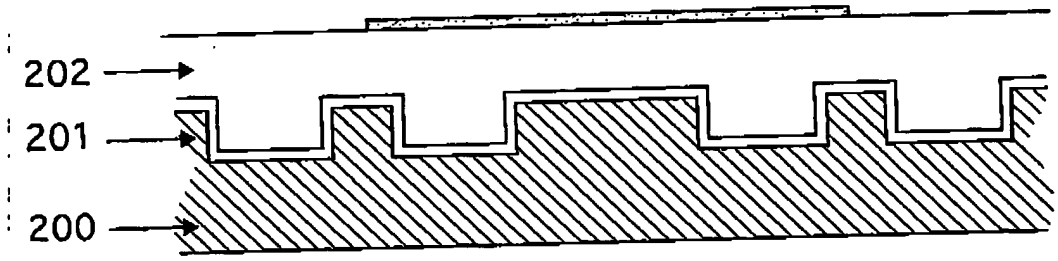
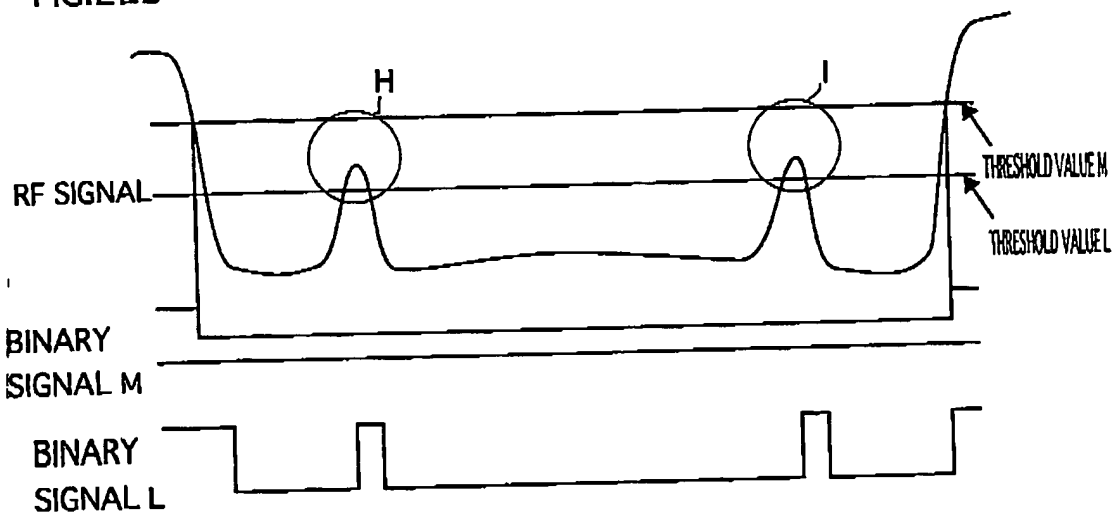


FIG.22B



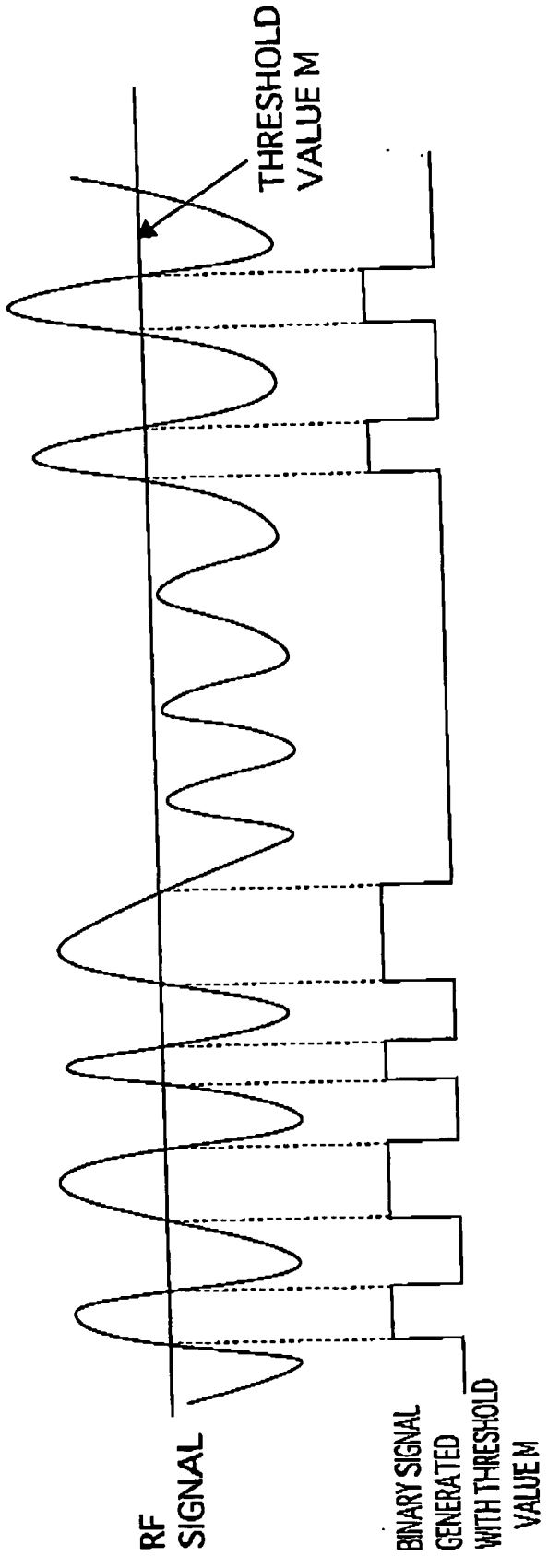

THRESHOLD VALUE M
RF SIGNAL
BINARY SIGNAL GENERATED WITH THRESHOLD VALUE M

FIG.23

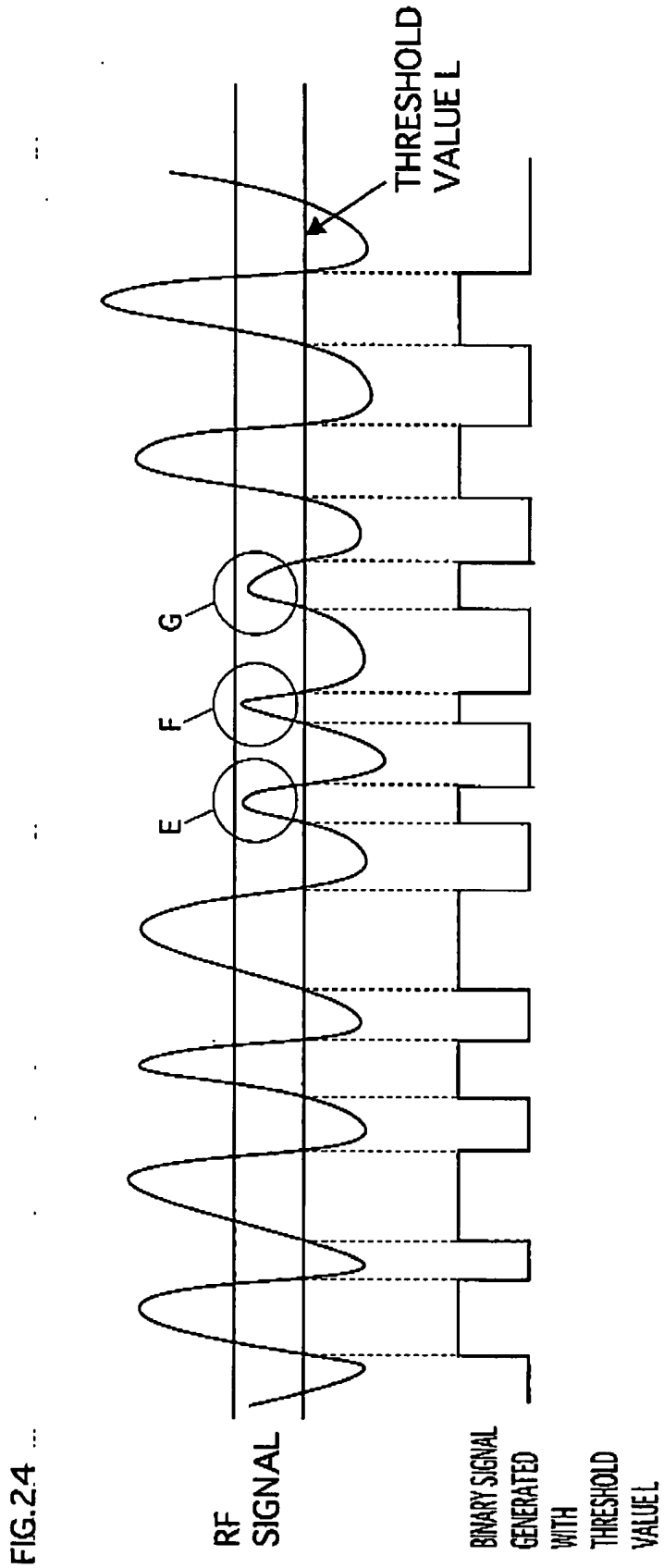

THRESHOLD VALUE L
G
F
E
RF SIGNAL
BINARY SIGNAL GENERATED WITH THRESHOLD VALUE L

FIG.24